

# IRWIN

## WOOD BORING TOOLS



"CUTS TRUE - CLEAR THRU"

The IRWIN Bit

REG. U.S. PAT. OFF




IRWIN

WOOD BOR NG 10012







# IRWIN

## Wood Boring Tools

*"The Bor Family"*

Catalog No. 11

THE IRWIN AUGER BIT CO.  
WILMINGTON, OHIO, U. S. A.



**The IRWIN Bit**

REG. U.S. PAT. OFF.

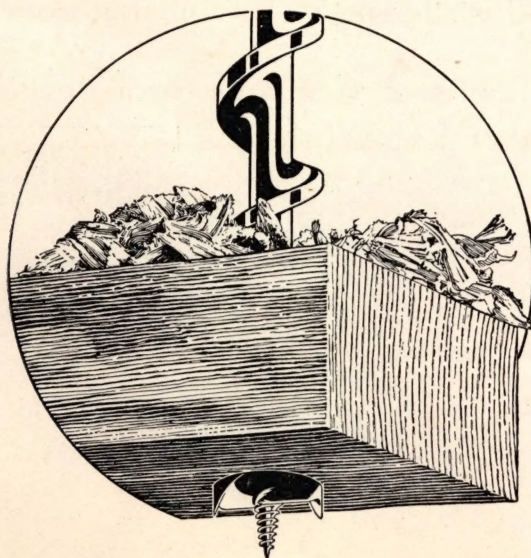




## WOOD BORING

A BIT or auger represents a large or small number of holes of a certain size. The bit that yields the greatest number of holes is also the one that takes the least effort to turn because one that saves your energy also saves itself from wear. Real boring is quite different from merely making holes.

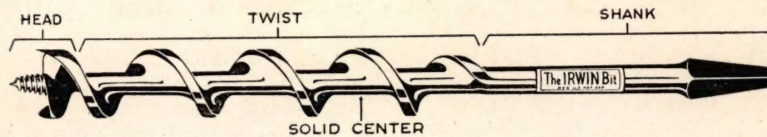
Your advantage lies in knowing what bit or auger is best adapted to your work. The information herein is to help you select the one that will give you the right kind of holes at the least cost per hole. The purpose is not merely to illustrate our goods and give list prices but also to furnish information that is of service to users of bits and augers.







## THE PARTS OF A BIT



**I**RWIN wood-boring tools are made of one solid piece of steel, yet for the purposes of description they are divided into three parts: the shank, the twist and the head.

The shank is the end of a bit which is held in a brace, handle or machine chuck.

The twist is the body of the bit that carries the chips out of the hole.

The head is the end of the bit that does the boring.

The shaft of steel that runs through the bit from one end to the other is called the solid-center.





## REASONS FOR IRWIN UNIFORMITY

THE Irwin Process is a distinctive series of steps used in the manufacture of wood-boring tools. Included in the process are patented methods for producing uniform quality.



Figure 1

A shank as it is hammered out in the Irwin Process is shown in Figure 1. The taper squares of Irwin shanks are forged so that the four sides are of uniform bevel. In a brace these shanks center a bit in perfect alignment for true boring. The dies upon which these shanks are forged are protected by letters patent.



Figure 2

Figure 2 shows a bit upon which the twist has been hammer-forged in addition to the shank. Before the bit is ground it is straightened so that all parts are centered around its axis. To get the parts of an auger bit uniformly straight is a difficult matter except for the Irwin Straightening Machine, which is protected by letters patent.





## REASONS FOR IRWIN UNIFORMITY



Figure 3

Figure 3 illustrates a bit on which the head has been formed in addition to the shank and the twist. The stock provided for each part of the head furnishes ample metal for the finished parts.

The dies on which the heads are forged to a uniform pattern are protected by letters patent.



Figure 4

Figure 4 shows a machined boring head. Semi-automatic milling machines of Irwin design shape the boring heads to an established standard. The cut of these machines is controlled by positive jigs and definite stops in such a way that all boring heads are accurate and uniform.





## UNIFORM HEAT TREATMENT

IRWIN bits are not twisted or milled out of the round. They are pounded out under power hammers. The hammering of the steel at the proper temperature densifies it and increases its wearing qualities.

The experience of the men who standardize the heat-treatment is aided by instruments first for measuring the degrees of heat and afterward for testing the hardness of the steel.

Each bit or auger is annealed full length in order to release internal strains that may have been set up in the steel at any point.

The final heat treatment gives each bit two tempers, one for the head and one for the body of the bit. The head is tempered and drawn so that the boring parts hold an edge. The body of the bit is tempered to give it strength.





## THE BORING HEAD



*Screw*



*Spur*



*Cutter*

THE life of a bit or auger depends upon how long the parts of the head last. These parts are the screw, spur, cutter and throat.

The screw feeds the bit into the wood.

The spur cuts the outline of the hole.

The cutters cut the chips.

The throat passes the chips to the twist.

Service and long life are built into the parts of the head in two ways. The first is to shape each individual part so that material for wear is provided at the vital points. The second is to adjust the parts to each other so that they are timed to work in perfect unison.

This is accomplished in the Irwin manufacturing process by machines of Irwin design, which work to definite standards and produce uniform, accurate boring heads.

There is satisfaction in a bit that takes a firm hold in the wood, turns easily, sends up a steady flow of chips and leaves a clean hole.





# IRWIN BORING HEADS

THE full range of boring heads is illustrated here and opposite each one is a detailed description of its duty. Some of these heads are for general purposes and some are for special purposes. All of them will bore, but it is a saving of energy to use the type of bit best adapted to the work you are doing. Boring heads are divided into two groups: double cutters and single cutters.

## DOUBLE CUTTERS

### THE MAINBOR HEAD

**USES**—Mainbor is a general purpose boring head and is the one most widely used. The majority of holes bored today are the work of the Irwin Mainbor.

**DESCRIPTION**—The Mainbor has a screw (1) with threads pitched to feed the bit into the wood at a speed suitable for general work; two spurs (2) of a length in keeping with the pitch of the thread of the screw; two cutters (3) on extension lips that offer ample material for wear, and two throats (4) made open to permit the easy flow of chips.

**BITS**—The Mainbor head is used on the Mainbor Auger Bit, page 14; Mainbor Dowel Bit, page 22; Mainbor 12" Short Car Bit, page 23; Mainbor 18" Car Bit, page 24, and Chuckbor Machine Bit, page 34.

**SMOOTHBOR**—Similar to Mainbor except that it has a screw, spurs and cutters adapted to very fine work. The Smoothbor head is for cabinet-making and pattern-making. It is used on the Smoothbor Auger Bit, page 14.



### THE ENDBOR HEAD

**USES**—The Endbor head is used in hard wood and in boring against the grain, also for boring deep holes in heavy timbers.

**DESCRIPTION**—The Endbor head has a screw (1) with the thread cut deep and pitched for hard wood; two cutters (2); two side lips (3), which cut the edges of the chips, and two throats (4).

**BITS**—The members of the Irwin Bor Family with the Endbor head are Endbor Auger Bit, page 14; Endbor Ring Auger, page 28; Endbor Rafting Auger, page 29; Endbor Boring Machine Auger, page 33; Endbor Nut Auger, page 30, and Endbor Derrick Augers, page 31.





### THE TAPBOR HEAD

**USES**—Tapbor is used to bore sugar trees. It leaves the bottom of the hole cupped so that the tree heals quickly.

**DESCRIPTION**—The Irwin Tapbor head consists of a screw (1); two curved cutters (2), which turn up into two side lips (3), and two throats (4).

**BITS**—The Tapbor head is used on the Tapbor Sugar Tree Bit, page 22.



## SINGLE CUTTERS

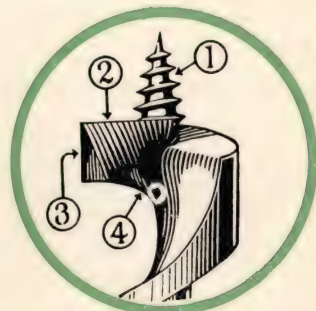
### THE CARBOR HEAD

**USES**—The Carbor head is used for boring to considerable depth, such as the jobs encountered in ship yards, bridge building and similar work.

The Carbor head with a little heavier material is called the SHIPBOR head.

**DESCRIPTION**—The Carbor head has a screw (1) with the threads cut and pitched for its particular work; one cutter (2); one side lip (3), and one throat (4). The cutter and side lip are supported by a heavy backing of metal for wear and for resharpening.

**BITS**—The Carbor head is used on the Carbor Auger Bit, page 15; Carbor 12" Short Car Bit, page 23; Carbor 18" Car Bit, page 24; Carbor 24" Long Car Bit, page 27; Shipbor Ship Auger, page 26, and Shipbor 24" Ship Auger, page 27.



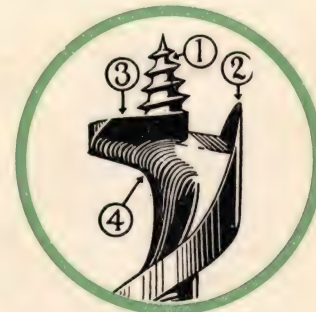
### THE SUREBOR HEAD

**USES**—The Irwin Surebor head bores a rapid hole through the wood used by farmers, electricians and mechanics.

The Surebor head with a longer and faster screw is called SPEEDBOR.

**DESCRIPTION**—The Irwin Surebor head has a screw (1) with a rapid pitch of thread; one stout spur (2) which is set to cut the edge of a thick chip; one cutter (3) with the proper body and angle for long wear, and one throat (4) shaped for the passage of chips.

**BITS**—The Irwin Surebor head is used on the Surebor Auger Bit, page 15; Surebor 18" Car bit, page 25; SPEEDBOR Electricians Bit, page 21, and the Electricians Boring Machine Bit, page 21.



### THE READYBOR HEAD

**USES**—The Readybor head is used where the fibre of the wood is stringy and tends to pack around the head of a bit.

**DESCRIPTION**—The Readybor head has a screw (1); one spur (2); one cutter (3); one side lip (4), and one roomy throat (5).

**BITS**—The Irwin Readybor head is used on the Readybor Auger Bit, page 15; Readybor 12" Short Car Bit, page 23, and the Readybor 18" Car Bit, page 25.







## THE SPEED OF A BIT

**A**T FIRST thought it would seem that the bit which makes the greatest advance in the wood at each turn would be the most desirable bit. Experience however teaches us that there is a suitable speed for each kind of work and that there is a place for a bit with even a very slow rate of advancement per turn.

The speed of a bit depends upon the angle of the thread of the screw. The angle of the thread is called pitch. The pitch of the thread governs the rate of advancement of a bit and the thickness of the chip it cuts. The pictures of the three boring heads below illustrate screws that will advance a bit rapidly, moderately or slowly.



*Quick Screw*



*Medium Screw*



*Slow Screw*

The threads of the screw must not only have a suitable pitch but they must have depth to take a strong hold in the wood. On bits of small diameter two threads starting on opposite sides of the point and running parallel to each other are cut. These are called double threads. The illustrations below show on the one hand a single thread, on the other hand a double thread and in the center the contrast between the single and double threads.



*Single Thread*



*Comparison between Single  
and Double Thread*



*Double Thread*





## SOME IRWIN RESEARCH METHODS

IN THESE charts the height of the lines illustrates graphically the comparative power required to bore different kinds of woods.

Chart No. 1 compares the power required by seasoned oak and green oak.

Chart No. 2 compares the power required by four kinds of wood: hickory, maple, oak and white pine.

Chart No. 3 illustrates the difference in the amount of power required to bore the same wood crosswise and endwise.

For Chart No. 4 two pieces of wood, one oak and one maple, were fastened together and bored at one time. The line shows the additional power required after the bit passed from the oak to the maple.

In making the tests for the first four charts one size of one style of bit was used. The Fifth chart shows the difference in the amount of power required by four different diameters of the same kind of bit.

These records are taken from the Irwin testing laboratory, which is equipped for the investigation of wood-boring. The research department is glad to receive samples of wood and to give customers the benefit of its service and experience.

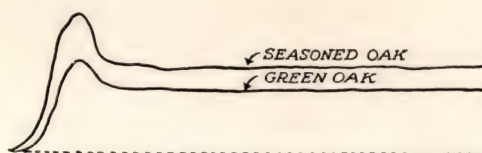


Chart No. 1

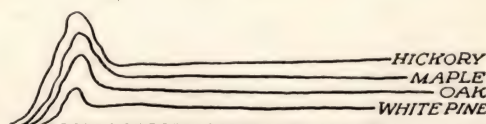


Chart No. 2

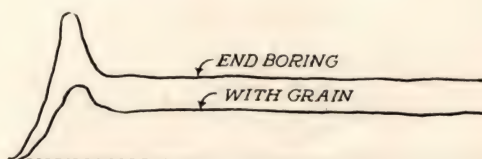


Chart No. 3

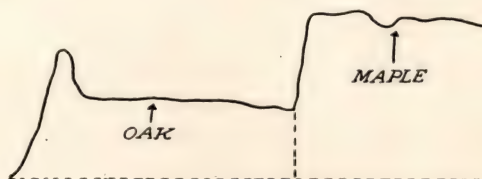


Chart No. 4

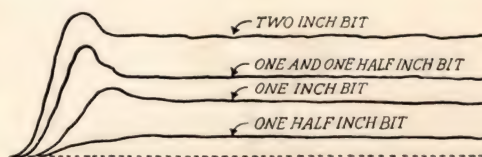


Chart No. 5





## THE IRWIN BOR FAMILY



THE members of the Bor Family differ from each other in length, size and boring head and yet they have certain family characteristics in common. One of these is the uniform quality built into them during the exclusive Irwin process of manufacture.

The variety of uses for wood-boring tools is wide. The sizes, the depths of holes, the kinds of wood and the forms of chuck are numerous. A variety of bits and augers is necessary to meet the different wood-boring needs. Yet in the Bor Family this variety is reduced to a line of bits and augers that covers the needs of modern wood-boring.

Each member of the Bor Family is given a name so that the user may call by name for the bit he has found best suited to his purpose. These names all end in the letters "bor" and are stamped on the shank in addition to the trade-mark.





## STANDARDIZATION

THE following pages show under each length of bit or auger only those boring heads and sizes which are practical for a dealer to sell. Not all of them are in demand in every community, but taking the world over they are used in stock quantities.

The Irwin Bor Family enables a hardware merchant to standardize on one brand and to carry a complete assortment without duplication of investment. Concentration on the stock of bits and augers and quick turnover go hand in hand.

Furthermore, a bit or auger stamped with the Irwin name, is accepted as a recognized value.

In the Irwin Bor Family the dealer can give his trade the full measure of wood-boring service under one established brand.







## IRWIN AUGER BITS

**STEEL**—Irwin auger bits are hammer forged from special analysis steel which is further refined and improved during the Irwin Process.

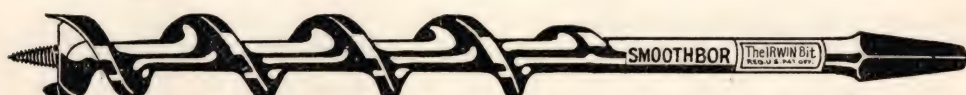
**FINISH**—A durable oil finish. The square of the shank a forged black. The polish is protected when it leaves the factory by a thin coating of oil, and the entire bit wrapped in waxed paper.

**HEADS**—A detailed description of the boring heads is on pages 8 and 9.



**MAINBOR**—Stock No. 62-T—For General Work.

The Irwin Mainbor is the most widely used auger bit. It is made for general work and is responsible for a majority of the holes that are bored today.



**SMOOTHBOR**—Stock No. 62-TS—For Cabinet Work.

The Irwin Smoothbor auger bit is used by cabinet-workers and pattern-makers. It runs easily and bores a smooth hole.



**ENDBOR**—Stock No. 72-T—For Hard Wood.

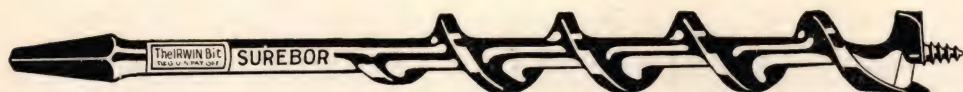
The Irwin Endbor auger bit is used where the work must be done against the grain or in hard woods, especially tropical hard woods.



**CARBOR**—Stock No. 52-T—For Heavy Work.

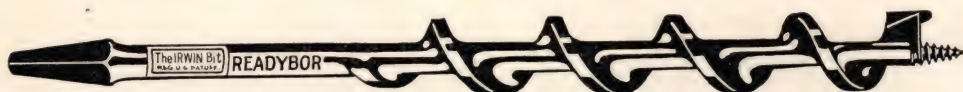
The Irwin Carbor auger bit is used where strong pressure is placed on a bit.





SUREBOR—Stock No. 32-T—For Rapid Work.

The Irwin Surebor auger bit is used for rapid boring in rough work.



READYBOR—Stock No. 42-T—For Extra Chip Clearance.

The Irwin Readybor auger bit is used in wood where the fiber is stringy and the chips have a tendency to swell or clog the bit.

## IRWIN LIST PRICES FOR AUGER BITS

The auger bits illustrated here are regularly carried in stock in the sizes shown in the list prices. The list price for a half-size or an intermediate size is the same as the list price for the next larger size quoted. The list prices for sizes not regularly carried in stock are on page 40. Millimeter list prices are on page 44. Auger bits one inch and under in size are packed one-half dozen in a box. Those over one inch in size are packed one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
3	\$4.50	7¼	4	1	14	\$8.00	8¾	4¾	4
4	4.00	7½	4	1	15	9.00	8¾	4½	5
5	4.00	7¾	4½	1	16	9.00	9	4¾	6
6	4.00	7¾	4½	1	17	10.50	9	4¾	6
7	4.50	7¾	4½	2	18	10.50	9½	4½	6
8	5.00	8	4¾	2	19	12.00	9½	4½	7
9	5.50	8½	4¾	2	20	12.00	9¾	5	8
10	6.00	8¾	4¾	3	21	13.50	9¾	5	8
11	7.00	8¾	4¾	3	22	13.50	9¾	5¼	9
12	7.00	8½	4¾	4	23	15.00	9¾	5¼	9
13	8.00	8¾	4½	4	24	15.00	9½	5½	10





## IRWIN SETS

IRWIN sets are packed in three different styles of containers: the upright wooden case, Borcase; the canvas roll, Borkit, and the wooden chest, Borchest. These keep an assortment together in the order of their sizes, prevent rust or injury and form a convenient package to carry.



### BORCASE

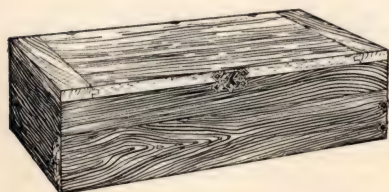
The Borcase is a set box of Irwin design made of matched hard-wood, glued, pressed and nailed. It has an eyelet and pin hinge and a positive lock. It is finished with two coats of water-proof shellac.

The inside divisions make a separate compartment for each bit.



### BORKIT

The Borkit is made of eight-ounce double-filled slate-colored duck, lined with non-tarnishable flannel. It is bound with braid, overcast with thread and fastened with a webbing strap that fits into a nickel-plated buckle. There is a satin label on the flap.



### BORCHEST

The Borchest is made of hard wood, oil-finished and dovetailed at the corners. The hinges and catches are of brass. The bits lay in grooved tills. The larger Borchests have two tills, one of which is hinged and swings out.



### CARTON

All set containers are packed for shipment in special cardboard cartons.

The sets are divided into three classes: sets of thirteen bits, sets of ten bits and sets of six bits.

The selection of the sizes and style of bits in each assortment is the result of long experience. Each standard set has a name which indicates its purpose.





# IRWIN SETS OF THIRTEEN BITS

## CARPENTERS SET

32½ Quarters

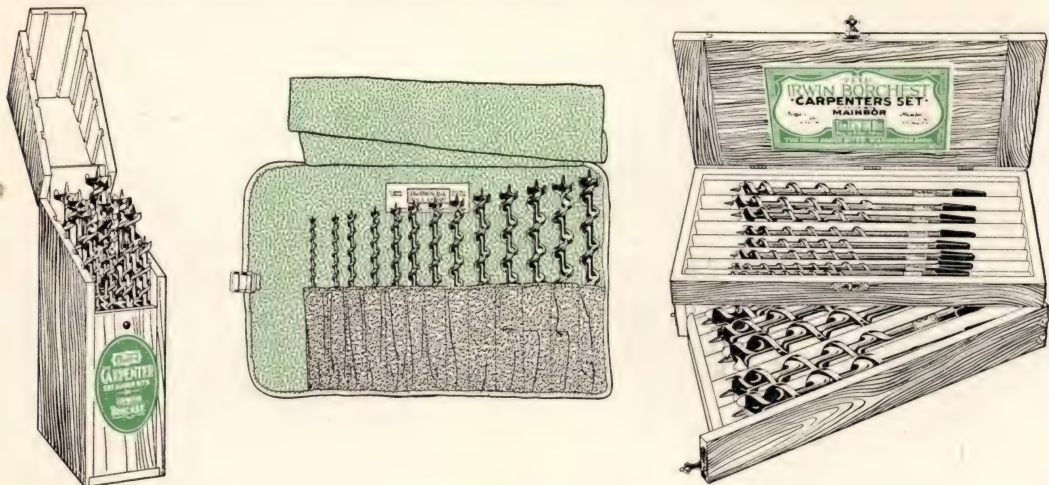
Stock Numbers in Borcase D. In Borkit DR. In Borchest DM.

USE—The Irwin Carpenters set gives an assortment of general purpose bits in a full range of sizes.

BITS—Irwin Mainbor Auger Bits. A full description of the cutting head is on page 8.

SIZES—There are 13 bits in the Carpenters set, one each, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16-16.

LIST PRICE—\$7.00 in either the Borcase, Borkit or Borchest.



## CABINET SET

32½ Quarters

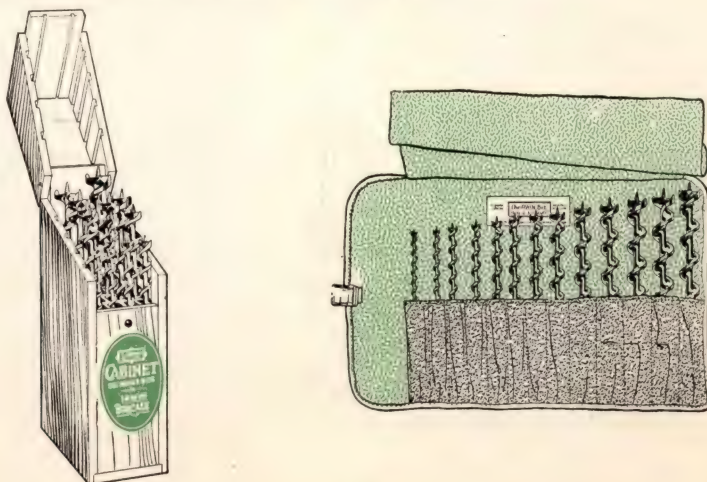
Stock Numbers in Borcase DS. In Borkit DSR.

USE—The Cabinet set is for cabinet-workers, pattern-makers and similar craftsmen.

BITS—Smoothbor Auger Bits 62-TS. A full description of the cutting head is on page 8.

SIZES—The Cabinet set contains 13 bits, one each, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16-16.

LIST PRICE—\$8.00 in either the Borcase, Borkit or Borchest.







# IRWIN SETS OF TEN BITS

## HANDY SET

20½ Quarters

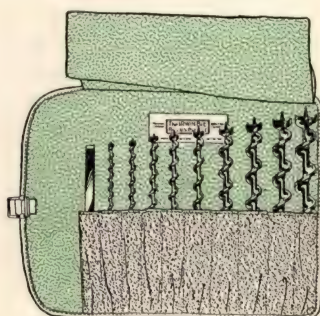
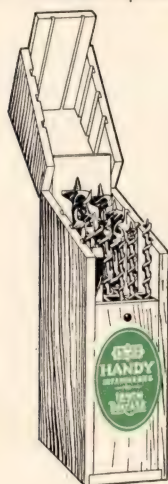
Stock numbers in Borcase A. In Borkit AR. In Borchest AM.

USE—The Handy Set furnishes a convenient assortment for the man who finds tools useful.

BITS—Mainbor Auger Bits 62-T. For a full description of the cutting head see page 8.

SIZES—There are 10 bits in the Handy Set, one each, 4, 5, 6, 7, 8, 10, 12, 14 and 16-16, and one six inch screw driver bit.

LIST PRICE—\$5.00 in either the Borcase, Borkit or Borchest.



## FARMERS' SET

20½ Quarters

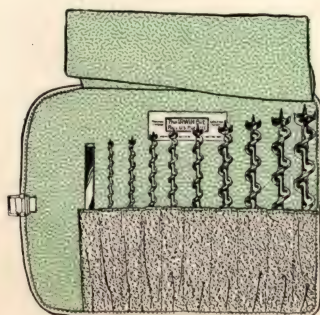
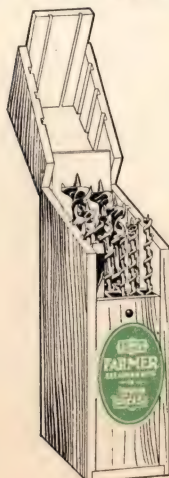
Stock numbers in Borcase E. In Borkit ER. In Borchest EM.

USE—The Farmers' Set contains the sizes and kind of bits most used on the farm.

BITS—Surebor Auger Bits 32-T. A full description of the cutting head is on page 9.

SIZES—The Farmers' Set contains 10 bits, one each, 4, 5, 6, 7, 8, 10, 12, 14 and 16-16, and one six inch screw driver bit.

LIST PRICE—\$5.00 in either the Borcase, Borkit or Borchest.







# IRWIN SETS OF SIX BITS

## HOME SET

14 Quarters

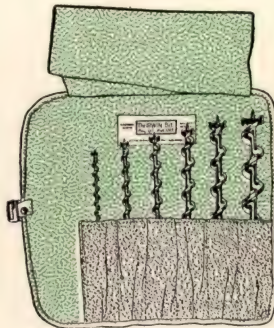
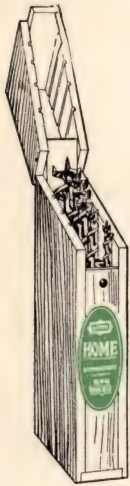
Stock numbers in Borcase BB. In Borkit BBR. In Borchest BBM.

USE—A small assortment for the householder and the man who needs a bit occasionally.

BITS—Mainbor Auger Bits 62-T. For a full description of the cutting head see page 8.

SIZES—The Home Set contains 6 bits, one each, 4, 6, 8, 10, 12 and 16-16.

LIST PRICE—\$3.50 in either the Borcase, Borkit or Borchest.



## COUNTRY KIT SET

14 Quarters

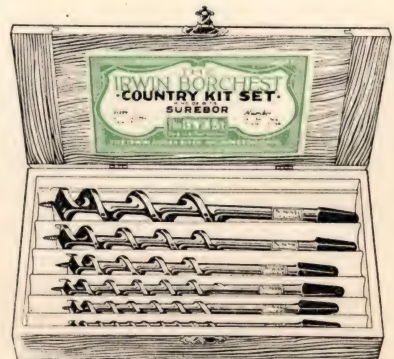
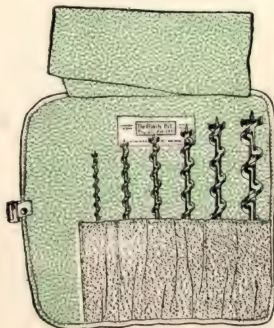
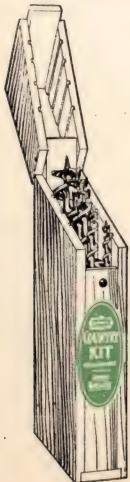
Stock numbers in Borcase F. In Borkit FR. In Borchest FM.

USE—For small farm and country home.

BITS—Surebor Auger Bits 32-T. A full description of the cutting head is on page 9.

SIZES—The Country Kit contains 6 bits, one each, 4, 6, 8, 10, 12 and 16-16.

LIST PRICE—\$3.50 in either the Borcase, Borkit or Borchest.







# IRWIN SETS OF SIX BITS

(CONTINUED)

## LITTLE SIX SET

1 1/4 Quarters

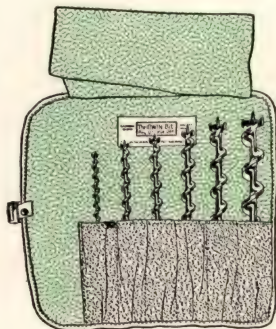
Stock Numbers in Borcase AA. In Borkit AAR. In Borchest AAM.

USE—A few high quality bits at a low price.

BITS—The Little Six set is made up of Mainbor auger bits 62-T. A full description of the cutting head is on page 9.

SIZES—The Little Six set contains 6 bits, one each, 4, 5, 6, 8, 10 and 12-16.

LIST PRICE—\$3.00 in either the Borcase, Borkit or Borchest.



## A SUMMARY OF IRWIN SET PRICES

Name of Set	In Bor- case Letter	In Borkit Letter	In Borchest Letter	No. Quarters in Set	Kind of Bit in Set	Stock No. of Bits	Sizes of the Bits in Each Assortment																Screw Driver	Total No. Bits	List Price
							4	5	6	7	8	9	10	11	12	13	14	15	16	16					
Little Six	AA	AAR	AAM	11¼	Mainbor	62T	1	1	1		1	1	1						6	\$3.00					
Home	BB	BBR	BBM	14	Mainbor	62T	1	1		1	1	1				1			6	3.50					
Country Kit	F	FR	FM	14	Surebor	32T	1	1	1		1	1	1			1			6	3.50					
Handy	A	AR	AM	20½	Mainbor	62T	1	1	1	1	1	1	1	1		1	1		10	5.00					
Farmers	E	ER	EM	20½	Surebor	32T	1	1	1	1	1	1	1	1		1	1		10	5.00					
Carpenters	D	DR	DM	32½	Mainbor	62T	1	1	1	1	1	1	1	1	1	1	1		13	7.00					
Cabinet	DS	DSR	DSM	32½	Smoothbor	62TS	1	1	1	1	1	1	1	1	1	1	1		13	8.00					

In addition to the sets mentioned above, we make four other assortments. They contain 8, 9, 11 and 12 bits respectively, and the sizes are selected to make a complete variety. These sets are filled regularly with the Irwin Mainbor auger bits, but a set of any of the different styles of cutting heads can be furnished in these assortments if desired.

In Borkit Letter	In Borchest Letter	No. Quarters in Set	Sizes of the Bits in Each Assortment																Screw Driver	Total No. Bits	List Price
			4	5	6	7	8	9	10	11	12	13	14	15	16	16					
BR	BM	24	1	1	2	1	2	1	2	1	1								12	\$5.90	
CR	CM	25½	1	1	1	1	1	1	1	1	1			1		1			11	5.95	
CCR	CCM	18	1	1	1	1	1	1	1	1	1								9	4.55	
DDR	DDM	18¾	1	1	1		1		1		1			1		1			8	4.50	





# IRWIN ELECTRICIAN BITS

**I**N ADDITION to the two bits illustrated below, electricians also use other members of the Irwin Bit Family, particularly auger bits and car bits.

**STEEL**—The electrician bits are hammer-forged from special analysis steel, which is further refined and improved during the Irwin Process.

**FINISH**—A bright durable finish, which is protected when it leaves the factory by a thin film of oil.

**HEADS**—A detailed description of the boring heads is on page 9.



*SPEEDBOR—Stock No. 3-E—For Electricians.*

**USE**—To cut a rapid hole for wire insulation pipe or cable, and to bore with speed and ease from the cramped positions where a ratchet brace is necessary.

**LENGTH**—10 inches with a twist of 6 inches and a shank of 4 inches.

**PRICE**—Speedbor is made in four sizes only, and packed one-half dozen in a box. The weight per dozen is 3¾ pounds. The list price per dozen of each of the four sizes is the same.

10/16	10½/16	11/16	12/16
<b>\$7.00</b>	<b>\$7.00</b>	<b>\$7.00</b>	<b>\$7.00</b>



*ELECTRICIAN'S BORING MACHINE BIT  
Stock No. 31-M—For Extension Boring Machines.*

**USE**—To bore holes in joists and rafters which must be reached by electricians' boring machines.

**LENGTH**—6 inches over all.

**SHANK**—In addition to the round shank the Electrician's Boring Machine Bits are also furnished with tapered square shank, in which case the stock number of the bit is 31-T.

**PRICE**—The list price per dozen of the four sizes is the same. The weight per dozen is 3 pounds.

10/16	10½/16	11/16	12/16
<b>\$6.00</b>	<b>\$6.00</b>	<b>\$6.00</b>	<b>\$6.00</b>





# IRWIN SHORT AUGER BITS



**MAINBOR DOWEL BIT**—Stock No. 61-T—For Short, Accurate Holes.

**USE**—The name comes from the use of these bits to bore holes for dowel pins to fasten wood-work together. They are also used for other purposes.

**LENGTH**—The length is 4½ inches, of which the twist is 3 inches and the shank 1½ inches.

**FINISH**—A bright, durable oil finish. The polish is protected when it leaves the factory by a thin coat of oil.

**HEAD**—The Mainbor head is described in detail on page 8.

## IRWIN LIST PRICES FOR MAINBOR DOWEL BIT

Mainbor Dowel Bit is regularly carried in stock in the sizes shown in the list prices. Other stock numbers not regularly carried in stock are on page 41. The list price for half sizes and intermediate sizes is the same as for the next larger size quoted. The list prices for sizes over one inch are the same as for auger bits on page 15. The millimeter table for auger bits on page 44 also applies to Dowel bits. Packed one-half dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
3	\$4.50	4½	3	1	10	\$6.00	4½	3	2
4	4.00	4½	3	1	11	7.00	4½	3	2
5	4.00	4½	3	1	12	7.00	4½	3	2
6	4.00	4½	3	1	13	8.00	4½	3	2
7	4.50	4½	3	1	14	8.00	4½	3	3
8	5.00	4½	3	1	15	9.00	4½	3	3
9	5.50	4½	3	1	16	9.00	4½	3	3



**TAPBOR**—Stock No. 91-T—For Boring Sugar Trees.

**USE**—The rounded cutting edges shape the bottom of the hole like a cup. The wood heals quickly and solidly because Tapbor does not leave a button of dead wood in the bottom of the hole.

**LENGTH**—The length is 6 inches over all, of which the twist is 3½ inches and the shank 2½ inches.

**HEAD**—The Tapbor head is described in full on page 8.

**LIST PRICES**—The Tapbor bit is carried in stock in three sizes at the following list prices per dozen: ⅜—\$4.00; 7/16—\$4.50, and 1/2—\$5.00.



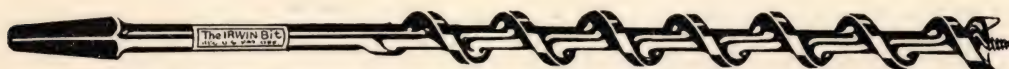


# IRWIN SHORT CAR BITS

**LENGTH**—12 inches over all, of which the twist is 8 inches and the shank 4 inches.

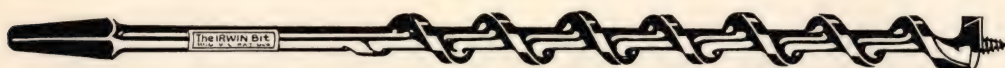
**FINISH**—A bright durable oil finish. The square of the shank is left a natural forged black. The polish is protected when it leaves the factory by a thin coat of oil.

**HEADS**—For a full description of these heads, see pages 8 and 9.



**MAINBOR** 12"—Stock No. 63-T—For Smooth Boring.

The Irwin Mainbor 12" short car bit is an easy running bit for the general kinds of woods.



**CARBOR** 12"—Stock No. 53-T—For Heavy Work.

The Irwin Carbor 12" short car bit is used to bore rough, heavy timbers.



**READYBOR** 12"—Stock No. 43-T—For Good Chip Clearance.

The Irwin Readybor 12" short car bit is used in woods where the fibre is stringy.

## IRWIN LIST PRICES FOR SHORT CAR BITS

Regularly carried in stock in the sizes shown in the list prices. The list price for an intermediate size or for a half size is the same as for the next larger size quoted. The list prices for sizes not regularly in stock are on page 40. Millimeter list prices are on page 44. Short car bits, one inch and under in size, are packed one-half dozen in a box. Those over one inch are packed one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
4	\$8.25	12	8	2	14	\$13.50	12	8	6
5	8.25	12	8	2	15	15.00	12	8	7
6	8.25	12	8	2	16	15.00	12	8	7
7	8.25	12	8	2	17	16.50	12	8	8
8	8.25	12	8	3	18	16.50	12	8	8
9	10.00	12	8	4	19	18.00	12	8	8
10	10.00	12	8	4	20	18.00	12	8	9
11	11.50	12	8	5	21	20.00	12	8	9
12	11.50	12	8	5	22	20.00	12	8	10
13	13.50	12	8	6	24	23.00	12	8	11





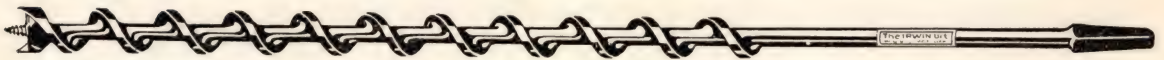
## IRWIN CAR BITS

**LENGTH**—The length of car bits is 18 inches over all; the twist is 12 inches and the shank 6 inches.

**STEEL**—Hammer-forged from Irwin special analysis steel which is further refined and improved by the Irwin process of manufacture.

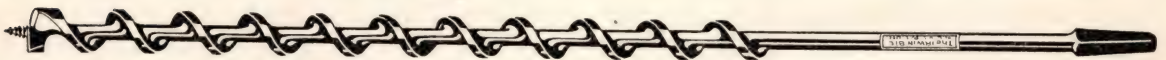
**FINISH**—A bright, durable oil finish except the square of the shank which is left a natural forged black. The polish is protected when it leaves the factory by a thin coat of oil.

**HEADS**—A detailed description of the boring heads is on pages 8 and 9.



**MAINBOR 18"**—Stock No. 65-T—For Smooth Work.

The Mainbor 18" car bit is an easy running car bit and can be used in the general range of woods.



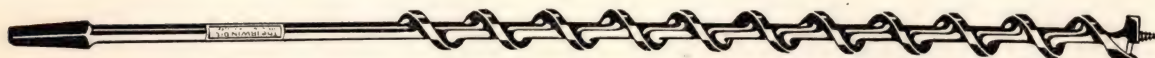
**CARBOR 18"**—Stock No. 55-T—For Heavy Work.

The Irwin Carbor 18" car bit is also known as the Ship Auger Car Bit. It is used where there is considerable stress in boring and where a bit is required to stand up under heavy strain.



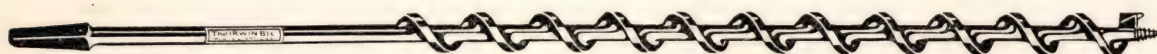


## IRWIN CAR BITS



**SUREBOR 18"**—Stock No. 35-T—For Fast Work.

The Irwin Surebor 18 Car Bit is used for rapid work in the general run of woods.



**READYBOR 18"**—Stock No. 45-T—For Good Chip Clearance.

The Readybor 18 Car Bit is used to bore wood where the fibres are stringy and have a tendency to swell and clog the bit.

## IRWIN LIST PRICES FOR CAR BITS

The car bits illustrated here are regularly carried in stock in the sizes shown in the list prices. The list prices for intermediate sizes or for half sizes are the same as for the next larger size quoted. The list prices for sizes not regularly in stock are on page 40. Millimeter list prices are on page 44. Car bits one inch and under in size are packed one-half dozen in a box. Those over one inch are packed one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
4	<b>\$9.00</b>	18	12	3	15	<b>\$20.50</b>	18	12	10
5	<b>9.00</b>	18	12	3	16	<b>22.00</b>	18	12	11
6	<b>9.00</b>	18	12	4	17	<b>24.00</b>	18	12	12
7	<b>10.00</b>	18	12	4	18	<b>26.00</b>	18	12	13
8	<b>11.25</b>	18	12	5	19	<b>28.00</b>	18	12	13
9	<b>12.50</b>	18	12	6	20	<b>30.00</b>	18	12	14
10	<b>13.75</b>	18	12	7	21	<b>32.00</b>	18	12	14
11	<b>15.00</b>	18	12	7	22	<b>34.00</b>	18	12	15
12	<b>16.25</b>	18	12	8	23	<b>36.00</b>	18	12	16
13	<b>17.50</b>	18	12	9	24	<b>38.00</b>	18	12	17
14	<b>19.00</b>	18	12	10					





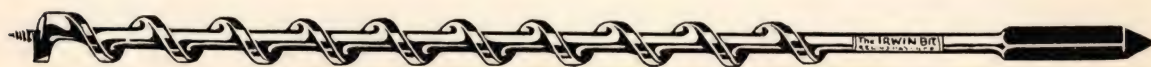
# IRWIN SHIP AUGERS

**USE**—The name ship auger explains itself. Its use, however, is not confined to ship building alone, but extends to any work where similar timbers are bored.

**LENGTH**—Irwin ship augers are 18 inches long, with a twist of 12 inches and a shank of 6 inches.

**FINISH**—There are two finishes: one a bright oil finish, the other a black enamel finish with polished edges.

**HEAD**—A detailed description of the Shipbor head are on page 9.



SHIPBOR—Stock No. 55-S—For Heavy Timbers.

Shipbor is constructed to stand up under the wear and tear of boring holes through rough timbers of big dimensions.

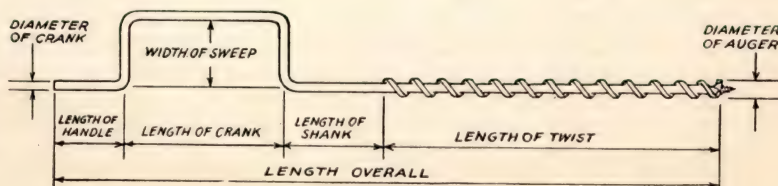
## IRWIN SHIPBOR LIST PRICES

The prices are shown here by sixteenths of an inch instead of eighths of an inch as was formerly the custom. Shipbor is carried in stock in the sizes shown in the list prices. The list prices for intermediate sizes or for half sizes are the same as for the next size larger. The list prices for sizes not regularly in stock are on page 40. Short car bits, one inch and under, are packed one-half dozen in a box. Those over one inch are packed one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
4	\$7.50	18	12	2	15	\$13.50	18	12	11
5	7.50	18	12	2	16	13.50	18	12	12
6	7.50	18	12	3	17	15.00	18	12	13
7	7.50	18	12	3	18	15.00	18	12	14
8	7.50	18	12	4	19	16.50	18	12	15
9	9.00	18	12	5	20	16.50	18	12	16
10	9.00	18	12	6	21	18.00	18	12	17
11	10.50	18	12	7	22	18.00	18	12	19
12	10.50	18	12	8	23	21.00	18	12	20
13	12.00	18	12	9	24	21.00	18	12	21
14	12.00	18	12	11					

### SHIPBOR with Crank

In ordering ship augers with cranks welded to them, specify the dimensions illustrated in the diagram.







# IRWIN 24" SHIP AUGERS AND 24" SHIP AUGER CAR BITS

**LENGTH**—24 inches with a twist of 18 inches and a shank of 6 inches.

**SHANK**—The two 24-inch bits illustrated here differ in the shank. One has a shank to fit a hand brace and the other has a shank to fit an auger handle.

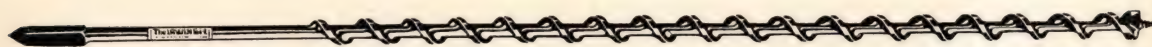
**HEAD**—A detailed description of the boring head is on page 9.

**FINISH**—Finished either with a bright polish or a Japan enamel, with polished edges.



**CARBOR 24"**—Stock No. 56-T—For Deep Boring.

Carbor 24" is built to bore long holes with a hand brace.



**SHIPBOR 24"**—Stock No. 56-S—For Heavy Work.

Shipbor 24" is built to bore through a heavy timber or through different layers of wood placed together. It is turned by an auger handle.

## IRWIN LIST PRICES FOR 24" SHIP AUGERS AND SHIP AUGER CAR BITS

Regularly carried in stock in the sizes shown in the list prices. Intermediate sizes and half sizes take the list price of the next larger size quoted. The prices for special lengths of bits and augers are on pages 32 and 33. Each bit is wrapped individually in two coats of rust-resisting paper.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
6	\$12.00	24	18	4 ½	16	\$28.20	24	18	15
7	13.50	24	18	4 ½	17	30.00	24	18	16 ½
8	15.00	24	18	7 ½	18	31.80	24	18	16 ½
9	16.50	24	18	7 ½	19	33.60	24	18	18
10	18.00	24	18	9	20	35.40	24	18	18
11	19.50	24	18	9	21	37.80	24	18	18
12	21.00	24	18	12	22	40.20	24	18	21
13	22.80	24	18	12	23	42.60	24	18	24
14	24.60	24	18	13 ½	24	45.00	24	18	24
15	26.40	24	18	15					





# IRWIN RING AUGERS

**USE**—The name comes from the ring into which a wooden handle is inserted. They are used where man power is more available than machine power.

**LENGTH**—24 inches with a twist of 16 inches and a shank of 8 inches.

**FINISH**—Two finishes: one a bright polish with the square of the shank and the ring enameled; the other, a black enamel finish with the edges of the twist polished.

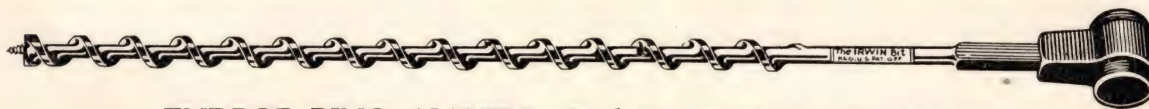
**RINGS**—High-grade malleable casting, clinched in place by an electrical process.

**HEADS**—Detailed descriptions of the heads are on page 8.



**MAINBOR RING AUGERS**—Stock No. 66-O—For Usual Woods.

Mainbor ring augers bore smoothly in the general run of lumber.



**ENDBOR RING AUGERS**—Stock No. 76-O—For Hard Wood.

Endbor ring augers are used in woods that have dense grain, such as many of the tropical woods.

## IRWIN LIST PRICES FOR RING AUGERS

Ring augers are carried in stock in the sizes shown in the list prices. Intermediate sizes or half sizes take the list price of the next larger size quoted. Millimeter list prices are on page 44. Ring augers are wrapped individually in two coats of rust-resisting paper.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
<b>6</b>	<b>\$10.00</b>	24	16	10	<b>16</b>	<b>\$15.00</b>	24	16	20
<b>7</b>	<b>11.00</b>	24	16	10	<b>17</b>	<b>16.50</b>	24	16	21
<b>8</b>	<b>11.00</b>	24	16	11	<b>18</b>	<b>16.50</b>	24	16	23
<b>9</b>	<b>12.00</b>	24	16	12	<b>20</b>	<b>18.25</b>	24	16	25
<b>10</b>	<b>12.00</b>	24	16	13	<b>22</b>	<b>20.00</b>	24	16	27
<b>11</b>	<b>13.00</b>	24	16	14	<b>24</b>	<b>22.75</b>	24	16	31
<b>12</b>	<b>13.00</b>	24	16	15	<b>26</b>	<b>24.50</b>	24	16	35
<b>13</b>	<b>14.00</b>	24	16	16	<b>28</b>	<b>26.75</b>	24	16	41
<b>14</b>	<b>14.00</b>	24	16	17	<b>30</b>	<b>28.00</b>	24	16	44
<b>15</b>	<b>15.00</b>	24	16	18	<b>32</b>	<b>30.00</b>	24	16	50





# IRWIN RAFTING AUGERS



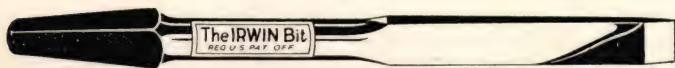
IRWIN RAFTING AUGERS—Stock No. 78-O—For Deep Boring.

THE Irwin Endbor Rafting auger is 32 inches long. The twist is 12 inches and the shank 20 inches. These augers are furnished in two finishes. With one, the auger has a bright polish, with the exception of the ring and the round of the shank. With the other, the auger is finished in black enamel, except the edges of the twist, which are polished. In material and construction, the Rafting auger is similar to the Endbor Ring auger on the page opposite. Rafting augers have the Endbor head described in detail on page 8.

## IRWIN LIST PRICES FOR RAFTING AUGERS

The Rafting augers are regularly carried in stock in the sizes shown in the list prices. Intermediate sizes take the list price of the next larger size quoted. List prices for millimeter sizes are on page 44. Each Rafting auger is wrapped individually in two coats of rust-resisting paper.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
16	\$24.00	32	12	24	28	\$48.00	32	12	42
18	28.00	32	12	28	32	56.00	32	12	48
20	32.00	32	12	30	36	66.00	32	12	52
24	40.00	32	12	36	40	76.00	32	12	58

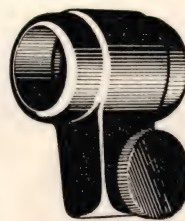


## IRWIN SCREW DRIVER BITS

Irwin screw-driver bits are made in three lengths: 4, 6 and 10 inches. They are polished with a durable oil finish, except the square of the shank, which is left a natural forged black.

STOCK NO.	X1-T	X2-T	X3-T
LENGTH OVER ALL	4 inches	6 inches	10 inches
LIST PRICE PER DOZEN	\$1.50	\$2.00	\$3.00

Irwin Ring augers and Rafting augers are regularly fitted with a ring that cannot work loose or be removed. However, the Irwin detachable ring, illustrated here, can be furnished if desired. This ring fastens with a set screw.



IRWIN  
DETACHABLE  
RING





## IRWIN NUT AUGERS



IRWIN NUT AUGERS—Stock No. 74-N—For Rough Work.

**USE**—The Nut auger takes its name from the nut which fits on the threaded end of the shank and keeps the handle in place. They are used to bore holes where, on account of the diameter of the hole, more driving power is needed than can be given with a brace.

**LENGTH**—The length of the nut auger is 18 inches, with a twist of 10 inches and a shank of 8 inches.

**FINISH**—The Irwin nut auger is furnished with two finishes. In one finish, the auger is fully polished, except the square of the shank. In the other, the auger is finished with black enamel, except the edges of twist which are fully polished.

**HEAD**—Nut augers have the Endbor head described on page 8.

## IRWIN LIST PRICES FOR NUT AUGERS

Regularly carried in stock in the sizes shown in the list prices. Intermediate sizes and half sizes take the list price of the next larger size quoted. Millimeter list prices are on page 44. Nut augers one inch in size and under are packed one-half dozen in a box. Those over one inch are packed one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
8	\$8.25	18	10	6	24	\$22.00	18	10	18
10	9.50	18	10	7	26	24.00	18	10	20
12	10.75	18	10	8	28	26.00	18	10	22
14	12.00	18	10	9	30	28.00	18	10	24
16	13.25	18	10	10	32	30.00	18	10	26
18	15.00	18	10	12	36	34.00	18	10	30
20	17.00	18	10	14	40	38.00	18	10	34
22	19.00	18	10	16					



### IRWIN DETACHABLE AUGER HANDLE

These handles are made of hard wood and fit over the square of the shank of Ship augers, Nut augers and Derrick augers. It is tightened on the auger by turning one of the handles. The list price is \$9.00 per dozen.





# IRWIN DERRICK AUGERS

**USE**—To bore holes for bolts in oil derricks.

**LENGTHS**—36 inches over all. Two lengths of twist and shank are regularly in use: one with 18-inch twist and 18-inch shank; the other, with 24-inch twist and 12-inch shank.

**FINISH**—Two finishes: one a bright polish, except the square of the shank which is enameled black; the other, an enamel finish with the edges of the twist polished.

**STOCK**—Derrick augers with both the 18-inch and the 24-inch twist are regularly carried in stock in the sizes shown in the list prices. Intermediate sizes take the list price of the next larger size quoted. The price for other sizes and other lengths of twist not regularly in stock is given on pages 32 and 33.

**HEAD**—Derrick augers have the Endbor head described in detail on page 8.



DERRICKBOR 18"

## IRWIN LIST PRICES FOR 18-INCH TWIST, 18-INCH SHANK

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
<b>4 to 8</b>	<b>\$24.00</b>	36	18	12	<b>16</b>	<b>\$40.80</b>	36	18	24
<b>9</b>	<b>26.40</b>	36	18	12	<b>18</b>	<b>45.30</b>	36	18	27
<b>10</b>	<b>27.90</b>	36	18	15	<b>20</b>	<b>49.80</b>	36	18	30
<b>11</b>	<b>30.30</b>	36	18	18	<b>22</b>	<b>55.50</b>	36	18	30
<b>12</b>	<b>31.80</b>	36	18	18	<b>24</b>	<b>61.20</b>	36	18	30
<b>13</b>	<b>34.50</b>	36	18	18	<b>28</b>	<b>76.80</b>	36	18	42
<b>14</b>	<b>36.30</b>	36	18	22	<b>32</b>	<b>92.40</b>	36	18	45
<b>15</b>	<b>39.00</b>	36	18	22					



DERRICKBOR 24"

## IRWIN LIST PRICES FOR 24-INCH TWIST, 12-INCH SHANK

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
<b>4 to 8</b>	<b>\$33.00</b>	36	24	12	<b>16</b>	<b>\$53.40</b>	36	24	24
<b>9</b>	<b>36.30</b>	36	24	12	<b>18</b>	<b>58.80</b>	36	24	27
<b>10</b>	<b>37.80</b>	36	24	15	<b>20</b>	<b>64.20</b>	36	24	30
<b>11</b>	<b>41.10</b>	36	24	18	<b>22</b>	<b>70.80</b>	36	24	30
<b>12</b>	<b>42.60</b>	36	24	18	<b>24</b>	<b>77.40</b>	36	24	36
<b>13</b>	<b>46.20</b>	36	24	18	<b>28</b>	<b>96.60</b>	36	24	42
<b>14</b>	<b>48.00</b>	36	24	21	<b>32</b>	<b>115.80</b>	36	24	50
<b>15</b>	<b>51.60</b>	36	24	22					





# SPECIAL LENGTHS OF BITS AND AUGERS

**T**O ENABLE the trade to figure in advance the cost of a special length of bit or auger, we give here the details in full. The table applies to car bits, ship augers, ring augers and derrick augers.

The price of special length bits or augers increases with the length of the twist.

Bits with a twist less than 18 inches but more than 12 inches, take the 18-inch list price shown in column No. 2 of the table opposite.

The price of bits with a length of twist over 18 inches is found as follows:

Find the size of bit in column No. 1 of the table opposite, and the list price per dozen for this size with an 18-inch twist in column No. 2.

Follow the size to column No. 3 and find the list price for each extra inch above the 18-inch base. Multiply the price per inch by the number of inches over 18.

Add this amount for the extra inches of twist to the 18-inch list price and you have the total list price per dozen.

Multiply the list price per dozen by the number of dozen or divide by the number of bits if a part of a dozen.

Deduct your regular discount for special lengths of bits and augers.

Add the net make-ready charge for the size as shown in column No. 4 of the table. This gives the net price for the lot.

Divide the price for the lot by the number of dozens or by the number of bits and you have the net price per dozen or per bit.

Examples A and B illustrate the steps.

## EXAMPLE A

To find the cost of 4 dozen  $\frac{3}{8}$ " bits with a 21-inch twist.

List per doz. of 18" Twist (Col. 2)	. \$15.00
3" extra @ \$1.50 per inch (Col. 3)	. <u>4.50</u>
List per doz. of 21" Twist . . . .	\$19.50
4 dozen @ \$19.50 per dozen . . . .	78.00
Net after deducting discount	
(For example) . . . . .	58.50
Add net make-ready charge (Col. 4).	<u>5.16</u>
Net price for lot . . . . .	\$63.66
Net price per dozen ( $\$63.66 \div 4$ ) . .	\$15.92

## EXAMPLE B

To find the cost of 3 only  $\frac{3}{8}$ " bits with a 22-inch twist.

List per doz. of 18" Twist (Col. 2)	. \$16.50
4" extra @ \$1.65 per inch (Col. 3)	. <u>6.60</u>
List per doz. of 22" Twist . . . .	\$23.10
$\frac{1}{4}$ dozen @ \$23.10 per doz. . . . .	5.80
Net after deducting discount	
(For example) . . . . .	4.35
Add net make-ready charge (Col. 4).	<u>5.88</u>
Net price for lot . . . . .	\$10.23
Net price per bit ( $\$10.23 \div 3$ ) . . . .	3.41

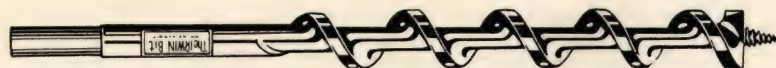
The length of the shank of special length car bits or ship augers is regularly 6 inches. For length of shank longer than regular, ask for quotations.

ALL ORDERS ACCEPTED NOT SUBJECT TO COUNTERMAND.





Column No. 1	Column No. 2	Column No. 3	Column No. 4	Column No. 1	Column No. 2	Column No. 3	Column No. 4
Sizes in 16ths of an Inch	List Price 18" Twist Per Doz.	List for Each Extra Inch Twist Per Doz.	Net Make-ready Charge Per Lot	Sizes in 16ths of an Inch	List Price 18" Twist Per Doz.	List for Each Extra Inch Twist Per Doz.	Net Make-ready Charge Per Lot
6	\$12.00	\$1.20	\$5.16	24	\$45.00	\$2.70	\$8.04
7	13.50	1.35	5.16	25	48.00	3.00	8.76
8	15.00	1.50	5.16	26	51.00	3.00	8.76
9	16.50	1.65	5.88	27	54.00	3.30	8.76
10	18.00	1.65	5.88	28	57.00	3.30	8.76
11	19.50	1.80	5.88	29	60.00	3.60	8.76
12	21.00	1.80	5.88	30	63.00	3.60	8.76
13	22.80	1.95	6.60	31	66.00	3.90	8.76
14	24.60	1.95	6.60	32	69.00	3.90	8.76
15	26.40	2.10	6.60	33	84.00	4.20	9.48
16	28.20	2.10	6.60	34	84.00	4.20	9.48
17	30.00	2.25	7.32	35	93.00	4.65	9.48
18	31.80	2.25	7.32	36	102.30	5.10	9.48
19	33.60	2.40	7.32	37	111.00	5.55	9.48
20	35.40	2.40	7.32	38	120.00	6.00	9.48
21	37.80	2.55	8.04	39	129.00	6.45	9.48
22	40.20	2.55	8.04	40	138.00	6.90	9.48
23	42.60	2.70	8.04				



IRWIN BORING MACHINE AUGERS—Stock No. 73-R—For Mortising Timbers.

USE—These augers are used in hand-boring machines.

LENGTH—The length over all is 12 inches. The twist is 8 inches and the shank 4 inches. The shank is round, 1½ inches long and ½ inch in diameter.

FINISH—Either fully polished or enameled with polished edges.

HEAD—Boring machine augers have the Endbor head described in detail on page 8.

## IRWIN LIST PRICES FOR BORING MACHINE AUGERS

Regularly carried in stock in the sizes shown in the list prices. Intermediate sizes and half sizes take the list price of the next larger size quoted. The list prices of millimeter sizes of Boring Machine Augers are on page 44. Boring Machine Augers, one inch in size and under, are packed one-half dozen in a box. Those over one inch, one-quarter dozen in a box.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Average Length Over All	Average Length of Twist	Approximate Wt. Per Doz.
8	\$10.00	12	8	5	20	\$19.00	12	8	12
10	10.00	12	8	6	22	21.00	12	8	13
12	11.00	12	8	7	24	24.00	12	8	14
14	13.00	12	8	9	28	28.00	12	8	16
16	15.00	12	8	10	32	32.00	12	8	17
18	17.00	12	8	11					





# IRWIN MACHINE BITS

**M**ACHINE bits, as their name indicates, are used in the chucks of power machines. The strength of the Irwin principle is shown in bits that are put under a heavy strain as machine bits are.

**STEEL**—Irwin machine bits are hammer-forged from special analysis steel which is further refined and improved during the Irwin Process. The bits are tempered and drawn especially for service in power machines.

## CHUCKBOR

*Stock No. 62-R—A General Purpose Machine Bit.*

**LENGTHS**—Chuckbor is stocked in five lengths of twist, 4", 6", 8", 10" and 12".

**STOCK**—The five lengths of twist are regularly carried in stock in the sizes shown in the list prices. The price for larger sizes is shown on page 38.

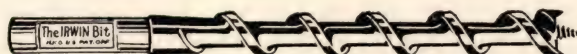
**SHANK**—The shank is 2 inches in length and  $\frac{1}{2}$  inch in diameter ( $2 \times \frac{1}{2}$ ). The price for other dimensions of shanks is shown on page 38.

**FINISH**—A bright durable polish. The shank is left as it comes from the lathe. The polish is protected when it leaves the factory by a thin coat of oil.

**HEAD**—A detailed description of the boring head is on page 8.

**PRICE**—The price of the lengths of twist is shown on the opposite page. The 4-inch twist takes the 6-inch list price. The price for intermediate lengths of twist and also for lengths of twist longer than 12 inches is shown on page 38. Half sizes take the list price of the next larger size quoted.





IRWIN LIST PRICES for CHUCKBOR Machine Bits with 4" and 6" Twist.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.
4	\$7.80	9	\$12.00	14	\$18.00	19	\$24.00
5	8.40	10	13.20	15	19.20	20	25.20
6	9.00	11	14.40	16	20.40	21	26.40
7	9.90	12	15.60	17	21.60	22	27.60
8	10.80	13	16.80	18	22.80	24	30.00



IRWIN LIST PRICES for CHUCKBOR Machine Bits with 8" Twist.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.
4	\$9.36	9	\$14.40	14	\$21.60	19	\$28.80
5	10.08	10	15.84	15	23.04	20	30.24
6	10.80	11	17.28	16	24.48	21	31.68
7	11.88	12	18.72	17	25.92	22	33.12
8	12.96	13	20.16	18	27.36	24	36.00



IRWIN LIST PRICES for CHUCKBOR Machine Bits with 10" Twist.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.
4	\$10.92	9	\$16.80	14	\$25.20	19	\$33.60
5	11.76	10	18.48	15	26.88	20	35.28
6	12.60	11	20.16	16	28.56	21	36.96
7	13.86	12	21.84	17	30.24	22	38.64
8	15.12	13	23.52	18	31.92	24	42.00



IRWIN LIST PRICES for CHUCKBOR Machine Bits with 12" Twist.

Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.	Sizes in 16ths of an Inch	Irwin List Price Per Doz.
4	\$12.48	9	\$19.20	14	\$28.80	19	\$38.40
5	13.44	10	21.12	15	30.72	20	40.32
6	14.40	11	23.04	16	32.64	21	42.24
7	15.84	12	24.96	17	34.56	22	44.16
8	17.28	13	26.88	18	36.48	24	48.00

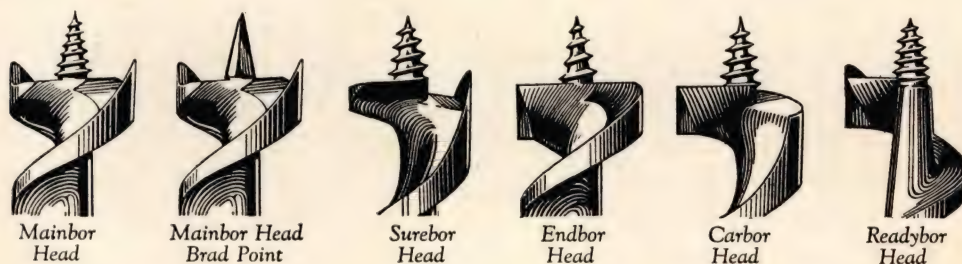




# IRWIN INDUSTRIAL MACHINE BITS

**A**MONG industrial machine bits are cross arm bits, spike bits, bits for railway shops and wood-working plants, and bits for plumbers and electricians. While they are not stock machine bits such as are carried by the hardware trade, yet they are not entirely special because the demand for them here and there is continuous and quantities of them are coming through the factory from time to time.

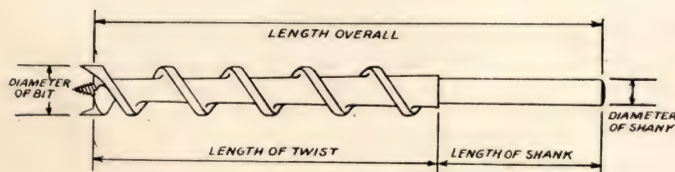
**HEADS**—Any type of boring head can be furnished. A detailed description of these heads is on pages 8 and 9.



**SHANKS**—The standard shank for machine bits is 2 inches long and  $\frac{1}{2}$  inch in diameter. There are other dimensions of round shanks, also there are taper shanks and screw shanks. These are illustrated in the diagrams shown at bottom of this page and top of page 37.

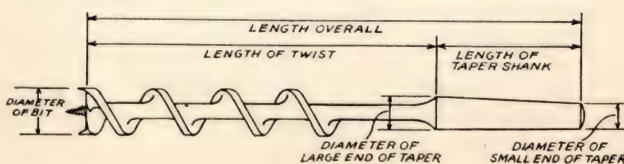
**PRICES**—Those in the market for the usual types of industrial machine bits should request quotations. Orders from different parts of the country for the same industry are often combined in the factory at a saving of expense. Prices for machine bits which are entirely special are on page 38.

**SPECIFICATIONS**—In ordering industrial machine bits the specifications suggested in the diagrams should be given.

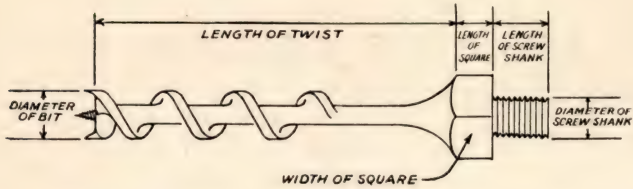


Machine Bit with Regular  
2" x  $\frac{1}{2}$ " Shank

Machine Bit with  
Taper Shank

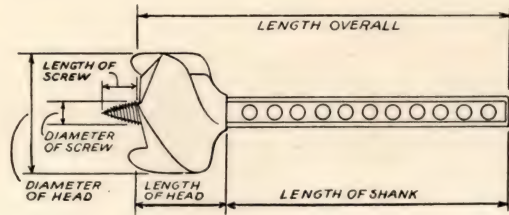






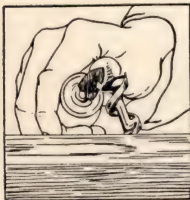
Machine Bit with  
Screw Shank

Machine Bit with  
Ratchet Shank



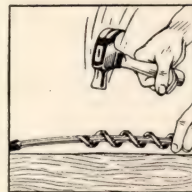
## THE CARE OF BITS

**I**F RESHARPENING is done it is a good idea to use a new bit as a guide and pattern after it in filing.



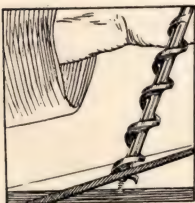
Resharpener Spur

In sharpening the spur on small bits, be careful not to touch the threads of the screw point. Never file a spur on the outside because this destroys the clearance of the bit and will cause it to bind in the hole.



Restraightening

If a bit is bent the crook can often be straightened. Roll the bit on a level surface until you see where the crook is and tap the bend lightly with a hammer.



Resharpener Cutter

To sharpen the cutting edges rest the screw point on a block of wood. Use a half-round file and the flat side is the one to sharpen the cutter. The edges of the file fit into the throat of the bit.



Preventing Rust

A bit should be wiped off with an oily rag after each exposure to moisture and especially when it has been used in green wood where the sap contains acid.

In using machine bits see that the bit is fastened firmly and also that the wood is held rigid. A wobbly drill chuck or a shifting of the work is one of the causes of bending machine bits. After filing a machine bit watch the character of the chips before starting it at high speed.





# IRWIN SPECIAL MACHINE BITS

**S**IZES, lengths and styles of machine bits which are not regularly carried in stock, but which must be forged and machined to order, are considered specials.

To enable customers to know in advance the cost of special machine bits, we give the details in full. For each lot of specials a make-ready charge is added. The make-ready charge covers the expense of placing dies and setting up the machinery. It takes as long to get ready for one bit as it does for one hundred and as much preparation for a short bit as for a long one. Therefore, the net make-ready charge is a flat expense on the lot, irrespective of quantity.

The price of special length machine bits increases with the length of the twist. The list price of the 6-inch twist is used as a basis. Special machine bits with a twist less than 6 inches take the 6-inch list price.

The price of special machine bits with a twist longer than 6 inches is found as follows:

Find the size of bit in column No. 1 of the table opposite and the list price per dozen for this size with a 6-inch twist in column No. 2.

Follow the size to column No. 3 and find the list price for each inch above the 6-inch base. Multiply the price per inch by the number of inches over 6 inches.

Add this amount for the extra inches of twist to the 6-inch list price and you have the total list price per dozen.

Multiply the list price per dozen by the number of dozen, or divide by the number of bits if a part of a dozen.

Deduct your discount for special machine bits.

Add the net make-ready charge for the size as shown in column No. 4 of the table. This gives the net price for the lot.

Divide the price for the lot by the number of dozens or by the number of bits and you have the net price per dozen or per bit.





Two examples of the method of finding the costs of special machine bits are given here. Example A involves a small quantity and example B a large quantity.

### EXAMPLE A

To find the cost of 3 only  $\frac{1}{8}$ " special machine bits with a 11-inch twist.

List Price for  $\frac{1}{8}$ " bit with 6" twist . . \$ 9.00  
 5" extra twist at @ \$1.08 per inch . . 5.40  
 List per dozen 11" twist . . . \$14.40  
 $\frac{1}{4}$  dozen @ \$14.40 per dozen . . . 3.60  
 Net after deducting discount for example 2.70  
 Add net make-ready charge (Col. 4) . . 5.16  
 Net Price for lot . . . \$ 7.86  
 Net Price per bit ( $\$7.86 \div 3$ ) . . . \$ 2.62

### EXAMPLE B

To find the cost of 5 dozen  $\frac{7}{8}$ " special machine bits with a 10-inch twist.

List Price for  $\frac{7}{8}$ " bit with 6" twist . . \$ 9.90  
 4" extra twist @ \$1.08 per inch . . . 4.32  
 List per dozen 10" twist . . . \$14.22  
 5 dozen @ \$14.22 per dozen . . . 71.10  
 Net after deducting discount for example 53.32  
 And net make-ready charge (Col. 4) . . 5.16  
 Net Price for lot . . . \$58.48  
 Net Price per dozen ( $\$58.48 \div 5$ ) . . \$11.69

Column No. 1	Column No. 2	Column No. 3	Column No. 4	Column No. 1	Column No. 2	Column No. 3	Column No. 4
Sizes in 16ths of an inch	List Price Per Doz. 6" Twist	List Price Per Doz. Each Extra Inch Twist	Net Make-ready Charge Per Lot	Sizes in 16ths of an inch	List Price Per Doz. 6" Twist	List Price Per Doz. Each Extra Inch Twist	Net Make-ready Charge Per Lot
4	\$7.80	\$1.08	\$5.16	22	\$27.60	\$2.76	\$8.04
5	8.40	1.08	5.16	23	28.80	2.88	8.04
6	9.00	1.08	5.16	24	30.00	3.00	8.04
7	9.90	1.08	5.16	25	31.50	3.15	8.76
8	10.80	1.08	5.16	26	33.00	3.30	8.76
9	12.00	1.20	5.88	27	34.50	3.45	8.76
10	13.20	1.32	5.88	28	36.00	3.60	8.76
11	14.40	1.44	5.88	29	37.50	3.75	8.76
12	15.60	1.56	5.88	30	39.00	3.90	8.76
13	16.80	1.68	6.60	31	40.50	4.05	8.76
14	18.00	1.80	6.60	32	42.00	4.20	8.76
15	19.20	1.92	6.60	33	43.80	4.38	9.48
16	20.40	2.04	6.60	34	45.60	4.56	9.48
17	21.60	2.16	7.32	35	47.40	4.74	9.48
18	22.80	2.28	7.32	36	49.20	4.92	9.48
19	24.00	2.40	7.32	37	51.00	5.10	9.48
20	25.20	2.52	7.32	38	52.80	5.28	9.48
21	26.40	2.64	8.04	40	56.40	5.64	9.48

The table is based on bits with a straight shank. For taper shanks add 5c net each and for screw shanks 12½c net each.

The table is also based on a normal length of the round shaft between the twist and the turned shank. For shafts longer than 3 inches, add 6c net for each extra inch.

ALL ORDERS ACCEPTED NOT SUBJECT TO COUNTERMAND.





# IRWIN SEMI-SPECIAL BITS AND AUGERS

THE list prices for bits and augers in the body of this catalog show only stock sizes and boring heads. Bits and augers of the sizes or boring heads not regularly carried in stock are regarded as semi-special items. We have on our shelves from time to time some of the semi-special sizes or boring heads, but we do not carry at all times a full range of them.

## MAKE-READY CHARGE

Semi-special bits and augers not in stock must be forged and machined to order. The make-ready charge covers the expense of placing dies and setting up machinery. It takes as long to get ready for an order of one bit as it does for an order of one hundred and as much preparation for a short bit as for a long one. Therefore, the make-ready charge is a flat expense on the lot, whether the quantity is large or small.

Sizes in 16ths	Make-ready Charge Per Lot	Sizes in 16ths	Make-ready Charge Per Lot
4 to 8	\$5.16	21 to 24	\$8.04
9 " 12	5.88	25 " 32	8.76
13 " 16	6.60	33 " 40	9.48
17 " 20	7.32		

## LIST PRICES FOR SEMI-SPECIAL SIZES OF BITS AND AUGERS

The list prices per dozen for sizes of bits and augers larger than shown in the lists for stock items are:

Sizes in 16ths of an Inch	Auger Bits	Short Car Bits	Car Bits	Ship Augers	24" Bits or Augers	Sizes in 16ths of an Inch	Auger Bits	Short Car Bits	Car Bits	Ship Augers	24" Bits or Augers
26	\$17.00	\$26.50	\$42.00	\$24.00	\$51.00	34	\$25.00	\$39.00	\$58.00	\$57.00	\$84.00
28	19.00	30.00	46.00	27.50	57.00	36	27.00	42.00	62.00	72.00	102.30
30	21.00	33.00	50.00	31.50	63.00	38	29.00	45.00	66.00	86.00	120.00
32	23.00	36.00	54.00	38.00	69.00	40	31.00	48.00	70.00	101.00	138.00





In the list prices on the opposite page the half sizes and intermediate sizes are not given. Half sizes and intermediate sizes take the list price of the next larger size quoted.

After the discounts have been deducted from the list price for semi-special sizes not in stock the net make-ready charge shown in the table on the page opposite must be added to the lot as a whole. All orders accepted not subject to countermand.

## PRICES FOR BITS AND AUGERS WITH SEMI-SPECIAL BORING HEADS

In addition to the range of boring heads shown for each kind of bit or auger, other boring heads can be furnished. The stock numbers are:

Tapbor Auger Bit, No. 92-T

Endbor Dowel Bit, No. 71-T

Carbor Dowel Bit, No. 51-T

Smoothbor Dowel Bit, No. 61-TS

Endbor 12", Short Car Bit, No. 73-T

Surebor 12", Short Car Bit, No. 33-T

Endbor 18", Car Bit, No. 75-T

Shipbor, Without Screw, No. 55-SWS

Carbor 24", Car Bit, Without Screw,  
No. 56T-WS

Mainbor 24", Car Bit, No. 66-T

Endbor 24", Car Bit, No. 76-T

Shipbor 24", Without Screw,  
No. 56S-WS

Carbor Ring Augers, No. 56-O

Smoothbor Machine Bit, No. 62-RS

Endbor Machine Bit, No. 72-R

Tapbor Machine Bit, No. 92-R

Carbor Machine Bit, No. 52-R

Surebor Machine Bit, No. 32-R

Readybor Machine Bit, No. 42-R,

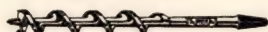
A detailed description of each of the boring heads is on pages 8 and 9.

The list price for each size of bit or auger with a semi-special boring head is the same as for the corresponding size of stock items. However, after the regular discount has been deducted from the list prices, the make-ready charge shown in the table on the opposite page must be added to the lot as a whole.





# SUMMARY OF IRWIN LIST PRICES



**AUGER BIT LIST**—Applies to bits of the usual auger bit length, also to sugar tree bits and dowel bits. See pages 14, 15 and 22.



**SPEEDBOR LIST**—The Speedbor prices are on page 21.



**SHORT CAR BIT LIST**—Apply to stock car bits 12" over all with 8" twist. See page 23.



**CAR BIT LIST**—Applies to stock car bits 18" over all with 12" twist. See pages 24 and 25.



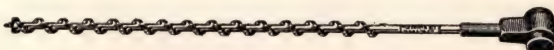
**LONG CAR BIT LIST**—Applies to stock car bits 24" over all with 18" twist. See page 27.



**SHIP AUGER LIST**—Applies to stock ship augers 18" over all with 12" twist. See page 26.



**LONG SHIP AUGER LIST**—Applies to stock ship augers 24" over all with 18" twist. See p. 27.



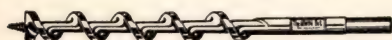
**RING AUGER LIST**—Applies to the stock ring augers 24" over all with 16" twist. See p. 28.

Sizes in 16ths of an inch	Auger Bit List	Speedbor List 6" Twist 10" Over All	Short Car Bits List 8" Twist 12" Over All	Car Bit List 12" Twist 18" Over All	Long Car Bit List 18" Twist 24" Over All	Ship Auger List 12" Twist 18" Over All	Long Ship Auger List 18" Twist 24" Over All	Ring Auger List 16" Twist 24" Over All	Sizes in 16ths of an inch
3	\$4.50								3
4	4.00		\$8.25	\$9.00	\$12.00	\$7.50	\$12.00	\$10.00	4
5	4.00		8.25	9.00	12.00	7.50	12.00	10.00	5
6	4.00		8.25	9.00	12.00	7.50	12.00	10.00	6
7	4.50		8.25	10.00	13.50	7.50	13.50	11.00	7
8	5.00		8.25	11.25	15.00	7.50	15.00	11.00	8
9	5.50		10.00	12.50	16.50	9.00	16.50	12.00	9
10	6.00	\$7.00	10.00	13.75	18.00	9.00	18.00	12.00	10
11	7.00	7.00	11.50	15.00	19.50	10.50	19.50	13.00	11
12	7.00	7.00	11.50	16.25	21.00	10.50	21.00	13.00	12
13	8.00		13.50	17.50	22.80	12.00	22.80	14.00	13
14	8.00		13.50	19.00	24.60	12.00	24.60	14.00	14
15	9.00		15.00	20.50	26.40	13.50	26.40	15.00	15
16	9.00		15.00	22.00	28.20	13.50	28.20	15.00	16
17	10.50		16.50	24.00	30.00	15.00	30.00	16.50	17
18	10.50		16.50	26.00	31.80	15.00	31.80	16.50	18
19	12.00		18.00	28.00	33.60	16.50	33.60		19
20	12.00		18.00	30.00	35.40	16.50	35.40	18.25	20
21	13.50		20.00	32.00	37.80	18.00	37.80		21
22	13.50		20.00	34.00	40.20	18.00	40.20	20.00	22
23	15.00		23.00	36.00	42.60	21.00	42.60		23
24	15.00		23.00	38.00	45.00	21.00	45.00	22.75	24
25	17.00		26.50	42.00	48.00	24.00	48.00		25
26	17.00		26.50	42.00	51.00	24.00	51.00	24.50	26
27	19.00		30.00	46.00	54.00	27.50	54.00		27
28	19.00		30.00	46.00	57.00	27.50	57.00	26.75	28
29	21.00		33.00	50.00	60.00	31.50	60.00		29
30	21.00		33.00	50.00	63.00	31.50	63.00	28.00	30
31	23.00		36.00	54.00	66.00	38.00	66.00		31
32	23.00		36.00	54.00	69.00	38.00	69.00	30.00	32





# SUMMARY OF IRWIN LIST PRICES



**BORING MACHINE AUGER LIST**—Applies to stock boring machine augers 12" over all with 8" twist. See page 33.



**NUT AUGER LIST**—Applies to stock nut augers 18" over all with 10" twist. See page 30.



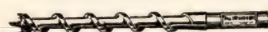
**DERRICK AUGER 18" x 18" LIST**—Applies to stock derrick augers with 18" twist and 18" shank. See page 31.



**DERRICK AUGER 24" x 12" LIST**—Applies to derrick augers with 24" twist and 12" shank. See page 31.



**RAFTING AUGER LIST**—Applies to stock rafting augers 32" over all with 12" twist. See page 29.



**MACHINE BIT 4" and 6" LIST**—Applies to stock machine bits with either 4" or 6" twist and a 2" x 1/2" shank. See page 35.



**MACHINE BIT 8" LIST**—Applies to stock machine bits with 8" twist and 2" x 1/2" shank. See page 35.



**MACHINE BIT 10" LIST**—Applies to stock machine bits with 10" twist and 2" x 1/2" shank. See page 35.

Sizes in 16ths of an Inch	Boring Machine Auger List 8" Twist 12" Over All	Nut Auger List 10" Twist 18" Over All	Derrick Auger List 18" Twist 36" Over All	Derrick Auger List 12" Twist 36" Over All	Rafting Auger List 12" Twist 32" Over All	Machine Bit List 6" Twist 2x 1/2" Shank	Machine Bit List 8" Twist 2x 1/2" Shank	Machine Bit List 10" Twist 2x 1/2" Shank	Sizes in 16ths of an Inch
4						\$7.80	\$9.36	\$10.92	4
5						8.40	10.08	11.76	5
6						9.00	10.80	12.60	6
7						9.90	11.88	13.86	7
8						10.80	12.96	15.12	8
9			\$8.25	\$24.00		12.00	14.40	16.80	9
10		9.50		26.40		13.20	15.84	18.48	10
11				36.30		14.40	17.28	20.16	11
12	\$11.00	10.75		37.80		15.60	18.72	21.84	12
13				41.10		16.80	20.16	23.52	13
14	13.00	12.00		42.60		18.00	21.60	25.20	14
15				46.20		19.20	23.04	26.88	15
16	15.00	13.25		48.00	\$24.00	20.40	24.48	28.56	16
17				51.60		21.60	25.92	30.24	17
18	17.00	15.00		53.40		22.80	27.36	31.92	18
19				57.00	28.00	24.00	28.80	33.60	19
20	19.00	17.00		62.40		25.20	30.24	35.28	20
21				64.20	32.00	26.40	31.68	36.96	21
22	21.00	19.00		68.40		27.60	33.12	38.64	22
23				70.80		28.80	34.56	40.32	23
24	24.00	22.00		75.00		30.00	36.00	42.00	24
25				77.40	40.00	31.50	37.80	44.10	25
26		24.00		84.00		33.00	39.60	46.20	26
27				87.00		34.50	41.40	48.30	27
28	28.00	26.00		93.60		36.00	43.20	50.40	28
29				96.60	48.00	37.50	45.00	52.50	29
30		28.00		103.20		39.00	46.80	54.60	30
31				106.20		40.50	48.60	56.70	31
32	32.00	30.00		89.40	56.00	42.00	50.40	58.80	32
				92.40					
				115.80					





# IRWIN MILLIMETER LIST PRICES

AS REFERRED to in previous pages, stocks of Irwin bits and augers are carried in millimeter sizes. In the following table the list price for the different millimeter sizes is given.

Nearest Sizes in 16ths	Milli-meter Sizes	Auger Bits	Short Car Bits	Car Bits	Ring Augers	Rafting Augers	Nut Augers	Boring Machine Augers	Milli-meter Sizes	Nearest Sizes in 16ths
3	5	\$4.50							5	3
4	6	4.00	\$8.25	\$9.00					6	4
4½	7	4.00	8.25	9.00					7	4½
5	8	4.00	8.25	9.00					8	5
5½	9	4.00	8.25	9.00					9	5½
6½	10	4.50	8.25	10.00	\$11.00				10	6½
7	11	4.50	8.25	10.00	11.00				11	7
7½	12	5.00	8.25	11.25	11.00				12	7½
8	13	5.00	8.25	11.25	11.00		\$8.25		13	8
9	14	5.50	10.00	12.50	12.00		9.50		14	9
9½	15	6.00	10.00	13.75	12.00		9.50		15	9½
10	16	6.00	10.00	13.75	12.00		9.50		16	10
10½	17	7.00	11.50	15.00	13.00		10.75		17	10½
11½	18	7.00	11.50	16.25	13.00		10.75		18	11½
12	19	7.00	11.50	16.25	13.00		10.75	\$11.00	19	12
12½	20	8.00	13.50	17.50	14.00		12.00	13.00	20	12½
13	21	8.00	13.50	17.50	14.00		12.00	13.00	21	13
14	22	8.00	13.50	19.00	14.00		12.00	13.00	22	14
14½	23	9.00	15.00	20.50	15.00		13.25	15.00	23	14½
15	24	9.00	15.00	20.50	15.00		13.25	15.00	24	15
16	25	9.00	15.00	22.00	15.00	\$24.00	13.25	15.00	25	16
16½	26	10.50	16.50	24.00	16.50	28.00	15.00	17.00	26	16½
17	27	10.50	16.50	24.00	16.50	28.00	15.00	17.00	27	17
17½	28	10.50	16.50	26.00	16.50	28.00	15.00	17.00	28	17½
18½	29	12.00	18.00	28.00	18.25	32.00	17.00	19.00	29	18½
19	30	12.00	18.00	28.00	18.25	32.00	17.00	19.00	30	19
19½	31	12.00	18.00	30.00	18.25	32.00	17.00	19.00	31	19½
20	32	12.00	18.00	30.00	18.25	32.00	17.00	19.00	32	20
21	33	13.50	20.00	32.00	20.00	40.00	19.00	21.00	33	21
21½	34	13.50	20.00	34.00	20.00	40.00	19.00	21.00	34	21½
22	35	13.50	20.00	34.00	20.00	40.00	19.00	21.00	35	22
22½	36	15.00	23.00	36.00	22.75	40.00	22.00	24.00	36	22½
23½	37	15.00	23.00	38.00	22.75	40.00	22.00	24.00	37	23½
24	38	15.00	23.00	38.00	22.75	40.00	22.00	24.00	38	24
24½	39	17.00	26.50	42.00	24.50	48.00	24.00	28.00	39	24½
25	40	17.00	26.50	42.00	24.50	48.00	24.00	28.00	40	25
26	41	17.00	26.50	42.00	24.50	48.00	24.00	28.00	41	26
26½	42	19.00	30.00	46.00	26.75	48.00	26.00	28.00	42	26½
27	43	19.00	30.00	46.00	26.75	48.00	26.00	28.00	43	27
27½	44	19.00	30.00	46.00	26.75	48.00	26.00	28.00	44	27½
28½	45	21.00	33.00	50.00	28.00	56.00	28.00	32.00	45	28½
29	46	21.00	33.00	50.00	28.00	56.00	28.00	32.00	46	29
29½	47	21.00	33.00	50.00	28.00	56.00	28.00	32.00	47	29½
30	48	21.00	33.00	50.00	28.00	56.00	28.00	32.00	48	30
31	49	23.00	36.00	54.00	30.00	56.00	30.00	32.00	49	31
31½	50	23.00	36.00	54.00	30.00	56.00	30.00	32.00	50	31½
32	51	23.00	36.00	54.00	30.00	56.00	30.00	32.00	51	32



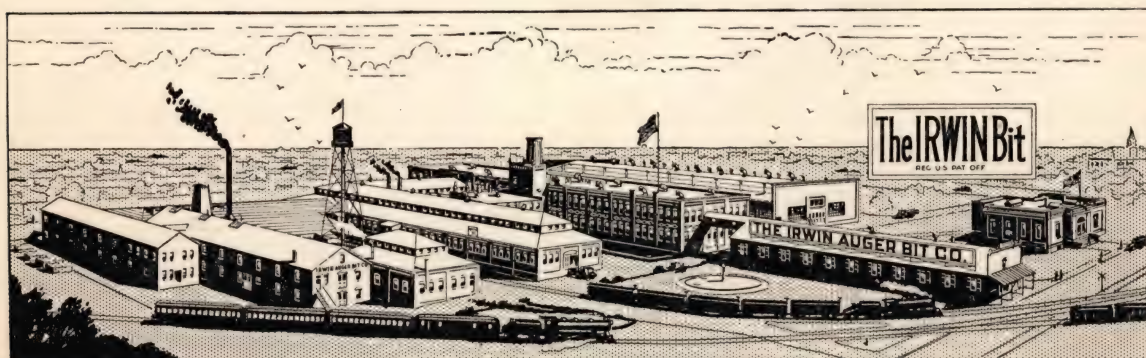


## WHERE IRWIN BITS ARE MADE



THE small factory where Irwin bits were first made in 1885 has grown into the largest and best equipped plant in the world, devoted exclusively to wood-boring tools. In its construction attention was given to light and sanitation and a complete system of pipes and exhaust fans gives constant ventilation.

The making of wood-boring tools is work for trained mechanics only. Many of the Irwin men have been with the company from its earliest days. Each man in the organization is a specialist in his work and has a permanent interest in the service given by his handiwork.







## THE IRWIN TRADE-MARK



THE man who buys a bit sees only its surface. He is not equipped to measure its clearances or to test its temper. He can not estimate the experience that enters into its construction. He must take these things on faith. He must look for a token of responsibility. This is what gives meaning to the Irwin trade-mark. It is stamped on the shank. Every bit that bears this mark is Irwin made. It is the mark of the originator and sole manufacturer of the genuine Irwin bit or auger.





## THE IRWIN GUARANTEE TAG

THE red and green tag shows on one side the name and stock number of the bit or auger and describes its use.

The other side of the tag carries our guarantee of the measure and quality of service which the bit will deliver and states that we stand behind your dealer.







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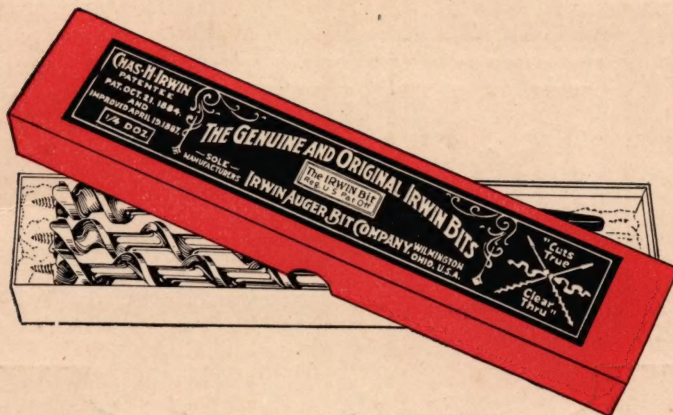
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THE IRWIN AUGER BIT CO.  
WILMINGTON, OHIO, U.S.A.